NASA's Ocean Observations for Climate Analyses and Prediction

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Remote sensing is the only avenue for detailed global coverage of ocean variability on the spatio-temporal scales of interest for climate analysis and prediction. Observations of key ocean surface fields (e.g., sea surface topography, SST, winds) are now available for extensive periods and have been used to constrain ocean models to provide a record of climate variations. The use of ocean color in coupled bio-physical models is emerging. Since the ocean is virtually opaque to electromagnetic radiation, the assimilation of these satellite data is essential to extracting the maximum information content. The ocean provides the most significant memory for the climate system. Hence, a critical element in climate forecasting with coupled models is the initialization of the ocean with states from an ocean data assimilation system. This talk will highlight current efforts that use NASA's ocean satellite observations for climate information and applications.